1984

Weed Control in Lawns and Other Turf

Cooperative Extension South Dakota State University

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FS 419

Weed Control in Lawns and Other Turf

Note:

The EPA has temporarily suspended the lawn uses for 2,4,5-T and silvex as listed in this publication. Products containing these herbicides should not be used until a final decision is announced.

Cooperative Extension Service
South Dakota State University
U.S. Department of Agriculture

Weed Control in Lawns and Other Turf

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One of the largest problems lawn keepers face is weed control. The best method for keeping weeds out of your lawn is to maintain a dense, vigorous stand of healthy grass. Such grass is able to effectively compete with weeds for moisture, plant food, light, and space in the lawn.

Here is how to get a vigorous stand of grass:

- Water when needed by soaking the soil to a 6- to 8-inch depth.
- Mow to maintain bluegrasses and red fescues at a 1½-inch height.
- Fertilize at least twice a year—once in the spring and again in early fall.
- Control insects and diseases by applying the proper chemicals as needed.

Poorly managed lawns are usually weedy, and well-managed lawns may occasionally have weed problems. These weeds may come from many sources.

Most soils contain hundreds and often thousands of live weed seeds per square foot. These seeds are able to remain dormant in the soil many years until conditions are favorable for germination. Weed seeds are often brought in with topsoil, mulches, or manure. They may be carried to your lawn by wind, water, and even birds. Poor quality grass seed mixtures may contain weed seeds that can cause problems in your lawn.

WEED CONTROL METHODS FOR LAWNS

The two primary methods of weed control are mechanical and chemical. **Mechanical methods** include the removal of weeds by pulling, digging, hoeing, cultivating, or other methods. These methods are useful where there aren't many weeds. **Chemical methods** eliminate weeds through use of special weed killing chemicals called herbicides or weedicides—a system useful for removing large numbers of weeds. This fact sheet is primarily devoted to chemical weed control.

Types of Herbicides

Herbicides are available in several forms:

- Emulsifiable Concentrates—mix these liquids in water and apply as sprays.
- Wettable Powders—mix these powders in water and apply as sprays.
- Granules—apply these materials dry with a fertilizer spreader.
- Combined with Fertilizers—apply by using a fertilizer spreader.
- Wax Bars—drag this bar over the lawn on a warm day so that the wax impregnated with herbicide will rub off on the weeds.

Time of Application

Herbicides may be applied pre-plant, pre-emergence, or post-emergence, depending on the weed problem. A **pre-plant treatment** is applied before seeding your lawn. **Pre-emergence treatments** are usually applied to established lawns before annual weeds emerge. **Post-emergence treatments** are applied after the weeds are up.

Most herbicides applied post-emergence must be absorbed by the leaves of the weeds. Seedlings of all weed species are easier to kill than older plants of the same species. Also, weeds are easier to kill with herbicides if they are growing actively. Thus, the post-emergence treatment is more effective if applied during warm, moist growing conditions.

Treat your lawn when the temperature is between 65 and 85 degrees and under good soil moisture conditions to get best results. Do not mow for 3 to 5 days before treating nor 1 to 2 days afterwards. Do not water for 24 hours after treatment.

ADJUSTING APPLICATORS

Calibration of Sprayer

Most chemical weed killers will kill turf grasses as well as weeds if too much is applied. It is essential to know the amount of material that a piece of equipment will apply on a given area. You can find this rate only by trying out the sprayer or spreader with water or some other harmless material. Do this calibration on the turf under conditions similar to those which will exist when you apply the chemical.

Follow these steps to determine the capacity of your equipment.

1. Measure 1,000 square feet of turf (a block 20 x 50 feet or equivalent), using twine to outline the block. (Most dosage recommendations are made for 1,000 square feet of area.)
2. Pour in a measured amount of water (for example, 3 gallons).
3. Pump up the sprayer to a reasonable pressure. (On a 2- to 3-gallon sprayer, 15 to 25 full strokes of the pump are suggested.)

4. Open the cut-off valve and walk at a reasonable pace over the block until all the surface is covered.
5. Release the air pressure and measure the amount of water left in the tank.
6. Subtract the amount left in the tank (step 5) from the amount placed in the sprayer to find the amount used in spraying 1,000 square feet.

Example: 3 gallons put in sprayer minus 2 gallons left = 1 gallon used to cover 1,000 square feet.

The amount found in step 6 is the base for figuring how much chemical to use in each gallon of water when you actually spray. The actual amount of water used is not important, but whatever the amount, it must be a known quantity. Thus, if the suggested rate of chemical is 2 ounces per 1,000 square feet and your sprayer applies 1 gallon per 1,000 square feet, you mix 2 ounces for each gallon of water the sprayer will hold. For instance, a 3-gallon sprayer will take 6 ounces of chemical.

Dry Spreaders

1. Measure 1,000 square feet of turf (20 x 50 feet).
2. Choose a setting on the feed-regulating device.
3. Weigh out about 5 to 10 pounds of the dry chemical and place in hopper. (Overdosage will seldom cause injury, but would be expensive.)
4. Open the feed and walk over the area until it has been fully covered.
5. Weigh the material left in the spreader.
6. Subtract the remainder from the original amount placed in the hopper to find how much you applied to the 1,000 square feet of turf.
7. Since most dry herbicides are sold in a ready-to-apply form, you may have to change the feed setting and repeat the process on a different area until you find a setting which is correct for the amount suggested on the product label.

These calibrations apply as much to the person using the equipment as to the sprayer or spreader. For that reason, keep your walking speed and the pressure in the tank as constant as possible.

HELPFUL HINTS

- Follow the directions and safety precautions listed on the label of each chemical container.
- Avoid prolonged contact of herbicides with your skin, and prolonged inhalation of herbicide dusts and mists.
- Use the **exact** amount of herbicide recommended on the label or in this Fact Sheet.
- Reduce drifting of chemical mists onto desirable vegetation at the time of spraying:
  1. Spray only during the calm of the day.
  2. Keep the spray nozzles close to the ground.
  3. Use low pressures on your sprayer.
  4. Use sprinkling can with proper spray mixture.
  5. Cover desirable vegetation with cardboard boxes, canvas, plastic, or other protective coverings.
- Reduce hazards from drift of herbicidal vapors or fumes onto desirable vegetation after spraying has been completed:
  1. Use low volatile form of herbicide to minimize drift of vapors given off after spraying. Amine and acid forms are less volatile than ester forms of sprays.
  2. Leave protective covers in place several hours after spraying.
- Clean your sprayer after each use.
- Dispose of empty herbicide containers at a sanitary land-fill, or crush and bury them at least 18 inches deep in a place they will not contaminate water supplies.

COMMON WEEDS AND THEIR CONTROL

DANDELION: *Taraxacum officinale* Weber.—**also called blow ball, and puff ball.**

Dandelion, a perennial, reproduces by seed or by lateral crown shoots from a fleshy, deep taproot. Leaves are 3 to 10 inches long and have irregular margins. Bright yellow flowers are produced on upright stems that may be from 2 to 18 inches tall. The seeds are attached to fluffy bristles and can be carried by the wind for many miles.

Dandelions may be controlled with 2,4-D, 2,4,5-T,* silvex or dicamba. **Use 2 tablespoons of 2,4-D or 1½ tablespoons of 2,4,5-T or silvex or 1 tablespoon of dicamba on each 1,000 sq. ft. Calibrate the sprayer and mix the chemical in the amount of water required to cover 1,000 square feet. Spray when the dandelions are growing actively. Do not spray dicamba in the root zone of trees and shrubs.**

COMMON CHICKWEED: *Stellaria media* (L.) Cyrillo—**also called starwort, satin flower, and starweed.**

This weed is an annual or winter annual that is especially troublesome where there is partial shade, such as around shrubs, foundations of houses, and in gardens. The plants reproduce by seeds and by trailing stems that take root at the lower joints. Heart-shaped, fleshy leaves are arranged in pairs on branched stems. Flowers are small, white, and star-shaped. Numerous tiny, rough, reddish brown, flat seeds are produced in a seed capsule.

Chickweed is difficult to control, but 2,4,5-T,* silvex, or dicamba may be used successfully. **Apply in May or early June before chickweed flowers. Use 1½ tablespoons of 2,4,5-T or silvex or 1 tablespoon of dicamba for each 1,000 square feet. Calibrate the sprayer and mix the chemicals in the amount of water required to cover 1,000 square feet. Follow-up treatments**

*See footnote on back page

Dandelion

Common Chickweed

Prostrate Knotweed

are usually required for good control. Do not spray dicamba in the root zone of trees and shrubs.

PROSTRATE KNOTWEED: *Polygonum aviculare* (L).—**also called knotgrass, dooryard weed, matgrass, and knotweed.**

Prostrate knotweed, an annual, reproduces only by seeds. The stems spread in all directions from a small taproot and form a dense, close-growing mat. The bluish-green leaves are attached to the stem at prominent "knots or joints."

Knotweed can be controlled with 2,4,5-T,* silvex dicamba, or a high rate of 2,4-D. **Use 2 tablespoons of 2,4,5-T, 1½ tablespoons of silvex, 1 tablespoon of dicamba, or 6 tablespoons of 2,4-D on each 1,000 square feet. Calibrate the sprayer and mix the chemical in the amount of water required to cover 1,000 square feet. Apply when plants are growing actively. Do not spray dicamba in the root zone of trees and shrubs.**

MAJOR PLANTAIN: *Plantago major* L.—**also called broadleaved plantain, dooryard plantain, and common plantain.**

Major plantain, a perennial, reproduces by seeds and new shoots from the roots. The leaves are egg-shaped, 1 to 8 inches long, grow close to the ground in a rosette, and have 3 to 11 parallel veins. A large number of brown seeds are produced on a flowering stalk that may be 2 to 10 inches tall.

Major plantain can be controlled by 2,4-D, 2,4,5-T* or silvex. **Use 3 tablespoons of 2,4-D or 1½ tablespoons of 2,4,5-T or silvex. Calibrate the sprayer and mix the chemical in the amount of water needed to cover 1,000 square feet. Apply when plants are growing actively in the spring or fall.**

CREEPING BELLFLOWER: *Campanula rapunculoides* L.—**also called bellflower and European bellflower.**

Creeping bellflower, a perennial, reproduces by seeds and thick, radish-like roots. The flowers are blue to purple, bell-shaped, and borne singly on the upper portion of the stem. The upper leaves are rough, egg-shaped, and taper to a long point, while lower leaves tend to be larger and heart-shaped. The stem is smooth with few or no branches and may be from 1 to 3 feet tall.

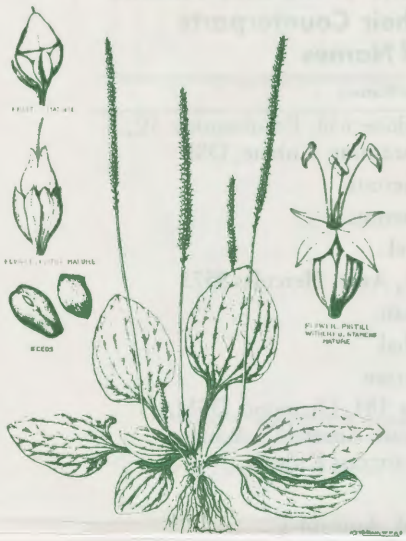
Creeping bellflower is resistant to 2,4-D and silvex, but can be controlled with dicamba. **Use 2 tablespoons of dicamba for each 1,000 square feet of area to be sprayed. Calibrate your sprayer and mix the chemical in the amount of water required to cover 1,000 square feet. Spray when the weeds are growing actively. Do not spray this chemical in the root zone of trees and shrubs.**

GROUND IVY *Glecoma hederacea* L.—**also called creeping charlie, field balm, and gill-over-the-ground.**

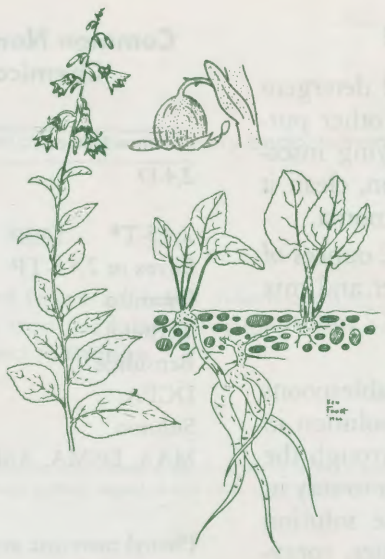
Ground ivy is a shallow-rooted perennial that is troublesome in shaded areas that are protected from direct sunlight. It reproduces by seed and creeping stems that form roots at the joints or nodes. The leaves are bright green, round, and ½ to 1½ inches in diameter. The leaves are hairy, arranged opposite along the four-sided stems, and have toothed margins. The small blue-purple flowers are funnel shaped and arranged in small groups. The seeds are rough, dark-brown, and appear in groups of four.

Ground ivy may be controlled with 2,4,5-T,* silvex or dicamba. **Use 2 tablespoons of 2,4,5-T or dicamba or 1½tablespoons of silvex on each 1,000 square feet. Calibrate the sprayer and mix the chemical in the amount of water required to cover 1,000 square feet.**

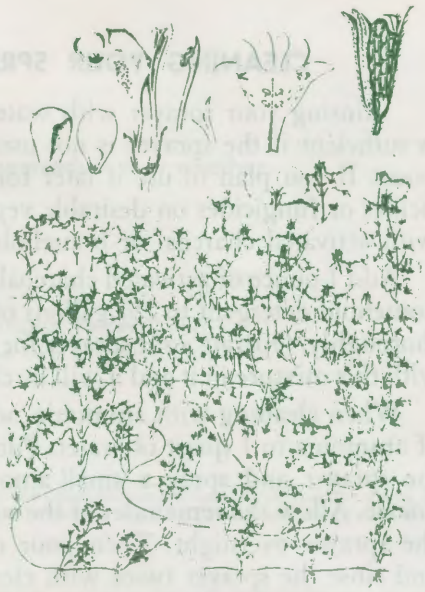
*See footnote on back page



Major Plantain



Creeping Bellflower



Ground Ivy

Spray in the spring or fall when ground ivy is growing actively. Do not spray dicamba in the root zone of trees and shrubs.

CRABGRASS *Digitaria sanquinalis* L.—**also called large crabgrass, watergrass, fingergrass, crow foot, and hairy crabgrass.**

Crabgrass, an annual, reproduces by seed and stems rooting at the joints. It appears during the hot summer months and is killed by a light frost. Crabgrass stems are erect or slightly prostrate. Leaves are 2 to 6 inches long and have scattered hairs on them and where they attach to the stem. The heads are usually 2 to 6 inches long, and have from 3 to 10 slender fingers branching off at the top. The small, hairy, pointed seeds are round on one side and flat on the other.

Crabgrass is easiest to kill if control measures are taken before it germinates. Applications of terbutol, bensulide, DCPA, and siduron have given good results when applied before crabgrass germinates. **Apply as directed on the label. After crabgrass is visible in your lawn, it is more difficult to control. However, MAA, and phenyl mercuric acetate will give good results. Apply according to directions on their labels.**

OTHER GRASSES—**Green foxtail:** *Setaria virdis* (L.) Beauv. and **yellow foxtail:** *Setaria glauca* (L.) Beauv. may be controlled with pre-emergence applications of bensulide. **Follow the directions on the label for crabgrass.** Post-emergence control may be obtained with MAA when foxtail is 2 inches tall. **Barnyardgrass:** *Echinochloa crusgalli* (L.) Beauv. is also controlled with DSMA if application is made before the grass is 6 inches tall. **Use the amounts given on the label for the control of crabgrass.**

Quackgrass: *Agropyron repens* (L.) Beauv., **bromegrass:** *Bromus inermis* Leyss., and **orchardgrass:** *Dactylis glomerata* (L.) are difficult to remove from turf. Herbicides that kill these grasses kill all lawn grasses. Infested areas may, however, be treated with amitrole-T. **Use 5 to 6 tablespoons per 1,000 square feet.** Treated areas may be reseeded in 5 weeks if the soil is thoroughly tilled.

Crabgrass

CLEANING YOUR SPRAYER

Rinsing your sprayer with water and detergent is sufficient if the sprayer is not used for other purposes. If you plan to use it later for spraying insecticides or fungicides on desirable vegetation, clean it with activated charcoal or household ammonia.

Add 1 ounce of activated charcoal and 2 ounces of household detergent to 2½ gallons of water and mix thoroughly. Operate your sprayer for about 2 minutes with this mixture in it and it will be clean.

When cleaning with ammonia, add 2 tablespoons of ammonia to 1 quart of water. Put this solution in the sprayer and spray a small amount through the nozzle. Allow the remainder of the solution to stay in the sprayer overnight. Then pour out the solution and rinse the sprayer twice with clean water, spraying a portion of each rinse through the nozzle.

Common Names of Some of the Less Volatile Chemicals and Their Counterparts in Brand Names

Common Names	Trade Names
2,4-D	Weedone 638, Emulsamine 3E, Dacamine, Lithate, DSP
2,4,5-T*	Numerous
Silvex or 2,4,5-TP	Numerous
Dicamba	Banvel
Terbutol	Azak, Azar, Hercules 9573
Bensulide	Betasan
DCPA	Dacthal
Siduron	Tupersan
MAA, DSMA, AMA	Ansar 184, Diamond DSMA, Clout, Ansar 157, Acme Crabgrass Killer
Phenyl mercuric acetate	Scutl
Amitrole-T	Cytrol, Amitrol-T

Common Lawn Weeds and Effectiveness of Several Herbicides for Their Control

Weed Name	Type of Plant	When to Apply	Control** 2,4-D	2,4,5-T*	Dicamba† (Banvel)	Silvex (2,4,5-TP)
Bellflower, Creeping *Campanula rapunculoids* L.	perennial		6P		2G	
Black Medic *Medicago lupulina* L.	annual	early spring	3F	3F	2G	3G
Chickweed, Common *Stellaria media*	annual	spring or fall	none	1½G	1G	1½G
Chickweed, Mouse-ear *Cerastium vulgatum* (L). Cyrillo	perennial	spring or fall	none	1½G	1G	1½G
Dandelion *Taraxacum officinale* Weber	perennial	spring or fall	2G	1½G	1G	1½G
Dock, Curly *Rume crispus* L.	perennial	spring or fall	2G	1½G	1G	1½F
Ground Ivy, or Creeping Charlie *Glechoma hederacea* L.	perennial	spring or fall	6F	2F	2G	1½G
Knotweed, Prostrate *Polygonum aviculare* L.	annual	spring	6F	2F	1G	1½F
Kochia, or Fireweed *Kochia scoparia* (L). Roth	annual	spring	1G	1G		1G
Mallow, Low, Dwarf, or Roundleaf *Malva rotundifolia* L.	annual or perennial	spring	3F	2F		2F
Plantain, Buckhorn *Plantago lanceolata* L.	perennial	spring or fall	3G	1½G	none	1½G
Plantain, Major, Broad-leaved, or Common *Plantago major* L.	perennial	spring or fall	3G	1½G	none	1½G
White Clover *Trifolium repens* L.	perennial	spring or fall	6P	3G	2G	3G
Woodsorrel, Yellow *Oxalis stricta* L.	perennial		6P			3G

**Tablespoons of chemical containing 4 pounds acid equivalent for use on 1,000 square feet to give P (poor), F (fair) or G (good) weed control. Use twice as much of a chemical containing only 2 pounds acid equivalent per gallon or 1½ times as much for a chemical containing 3 pounds per gallon.

†Do not use dicamba under shallow-rooted trees and shrubs.

***The use of 2,4,5-T around homes or near food and water supplies is no longer approved by Federal agencies. 2,4,5-T may be used on other turf areas.**

Use of a tradename does not imply endorsement of one product over another.

SAFETY FIRST

Read and follow all label directions and precautions. Federal regulations and the label directions concerning the use of chemicals are subject to change.

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